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AUTHOR Braun, Carl; And Others
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ABSTRACT

A study examined the impact of instruction on the metacognitive strategies of five fifth-grade students whose vocabulary knowledge test scores were two or more stanines higher than their comprehension test scores. The students were administered "The Informal Reading Inventory" to determine their appropriate functional levels and the general nature of their cognitive processing. During the test, the students periodically heard and reacted to tapes of their reading, and their responses were recorded. The students then participated in 13 one-hour conferences over a four-week period. Eight of the conferences involved all of the students and two or three adults, the rest involved two or three students and one adult. The conferences focused on the strategic use of language information rather than on direct teaching of comprehension/word recognition skills. Reciprocal teaching strategies such as summarizing, questioning, clarifying, and predicting were used, along with strategies to help the students discover the logical structure of the text. Posttest results revealed evidence of less preoccupation with word accuracy in postsession readings and considerable evidence of self-monitoring and self-questioning in the postsession readings, as well as in student reactions to tapes of their reading. There was also evidence of a marked change in students' responses to inference questions, indicating that they could draw on prior knowledge and implicit text information to arrive at responses. (FL)

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CARL BRAUN

BARBARA J. RENNIE

GEORGE D. LABERCANE

University of Calgary

A CONFERENCE APPROACH TO THE DEVELOPMENT OF METACOGNITIVE STRATEGIES

Current research holds promise for intervention schemes to develop metacognitive strategies which aim to assist readers to simultaneously concentrate on the material they are reading and on themselves as learners. The reciprocal teaching program devised by Brown and Palincsar (1985) is perhaps the most formalized scheme. The strategies featured in the program are summarizing (self-review), formulating potential test questions, clarifying occasions of ambiguity and predicting future content. Other investigations have found that instruction in goal-directed self-questioning results in

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improved comprehension (Andre & Anderson, 1978-79; Nolte & Singer, 1985). Sensitizing young readers to the logical structure of text and the inherent meaning in particular passages has also been shown to improve comprehension (Bransford, Stein, Shelton, & Owings, 1981). It has been suggested by a number of researchers that there seem to be many candidate strategies that one can choose in translating metacognitive theory into concrete applications.

Except for the studies involving self-questioning strategies, many of the metacognitive instructional studies have focussed on retarded readers. Few, if any, have identified more specific characteristics of learners. At least one study (MacGinitie, 1985) has suggested that children whose vocabulary knowledge significantly exceeds comprehension are lacking in metacognitive abilities.

The need for a social context for the development of metacognitive abilities has been recognized by Brown and Reeve (1985). Social interaction facilitates the development of an independent repertoire from a repertoire formerly dependent on adult guidance or "collaboration with capable peers" (Vygotsky, 1978, p. 86).

This study examined the impact of instruction on metacognitive strategies of a limited sampling of children whose vocabulary knowledge was high relative to comprehension. The conference setting provided the social context within which children were able to "navigate with or without aid."

PROCEDURE

A fifth grade class of 32 students from one city elementary school was screened by group administration of the Gates-MacGinitie

Reading Test, Level D, Form 2. Five subjects were selected whose vocabulary subtest scores were two or more stanines higher than their comprehension subtest scores. The diverse reading levels of the group were characterized by a range of vocabulary (stanines 4 to 9) and comprehension scores (stanines 2 to 6) (see Table 2). The three boys and two girls ranged in age from 10 years 5 months to 11 years 11 months.

Pre-session Assessment

The Informal Reading Inventory, Second Edition, Forms A and B (Burns & Roe, 1985) was administered to each student both to determine appropriate functional levels and the general nature of processing (i.e., an examination of psycholinguistic processing and an analysis of recall protocols). During the administration, the examiner periodically had the student listen to his/her reading and react to it. The students were asked, for example, how well they felt they had read, why they had self-corrected specific miscues, how the examiner could have helped them. Oral recalls were also recorded.

Pre-session results showed marked similarities in students' reading strategies in spite of a wide range in reading levels. All five students paid much more attention to accurate word reading than to comprehension of text. Their word recognition scores in the oral readings remained at the instructional level several grade levels beyond their comprehension scores. One student, for example, reached frustration level at grade four when comprehension was considered, but continued to read with 95% word accuracy through to level 12. When asked to respond to their own oral readings, most students referred to lack of "expression", to their pauses to sound out words, to "hard

words" in the selection. There seemed to be limited awareness that reading should be more than pronouncing words with accuracy. At one point, one student volunteered, "I can pronounce things I don't know," but she seemed to feel this was to her credit. When asked why she thought she might have had trouble recalling a particular selection and answering the questions, she said, "I was too concentrating on the words--the big words." There was no evidence that these students were really critical of their own performance. That is, there was little, if any, evidence that they were engaging in any monitoring other than for word accuracy.

Prior to the conference sessions these students were unaware of the role of context in meaning making and generally unable to answer inference questions, the usual response being, "It didn't say." They had limited awareness that prior knowledge could be called upon to answer a question. One boy when asked if he had thought of the answer given replied, "Oh I knew that answer, but I didn't think the story said the answer."

In summary, these readers demonstrated limited ability to reflect both on the content and on themselves as readers. Even the concentration on content appeared to be restricted to local context (i.e., self-corrections took into account sentence level context only, never the totality of the context). Second, students focussed mainly on word reading. Third, there was no evidence of self-monitoring or self-regulating behavior except at the sentence level. Fourth, there was no evidence of hypothesis testing, prediction or self-questioning, and no knowledge of text structure in guiding the meaning making process.

Conference Procedures

The students participated in 13 conferences of one hour each, spaced over four weeks. Eight of these sessions were large group (i.e., the five students and two or three adults), and five were small group (i.e., two or three students with one adult). When more than one adult was present, one acted as the conference leader and the other(s) took a recorder/participant role which involved making observational notes and participating in group conferences as a learner.

Conferences were focused on the strategic use of language information rather than on direct teaching of comprehension/word recognition skills. Several themes were used to encourage students to talk about language as it was used in the selections presented. This talk was guided by the adult(s) to develop students' awareness of the strategies they had used or that they might use to help themselves understand the text. The students were encouraged to initiate questions both of the text, of themselves, and of the adult reader(s) with the intent that a sharing of insights would enhance their self-monitoring/ regulatory/repair strategies.

Aspects of Palincsar and Brown's (1984) reciprocal teaching strategies were used: summarizing, questioning, clarifying, and predicting. These were used to help students engage in more active meaning searches, to facilitate an awareness of the wholeness of text, and to promote self-monitoring. This was supplemented with Raphael, Wonnocat, and Pearson's (1983) three question-answer relationships right there, think and search, and on my own.

Strategies were employed specifically to enable students to

experience the logical structure of text. Cloze passages were constructed to encourage discussion of strategic deletions so that students could see the logic of particular decisions in relation to both local and global context. Semantic or structural maps were constructed to enhance knowledge of relational aspects of text. In each of these strategies, emphasis was on discussion, decisions and alternatives. All sessions were audiotaped for subsequent analysis.

Post-session Assessment

At the conclusion of the conferences, the Gates-MacGinitie Reading Test, Level D, Form 1, was administered to the group of five students. The Informal Reading Inventory, Second Edition (Burns & Roe, 1985) was administered. As in the pretest, students listened and responded to their own reading, and did oral retellings. Each was asked to make a semantic map of a passage. The students were asked to reflect on what they had learned during the sessions.

RESULTS AND DISCUSSION

The functional reading levels from the pre and post IRI results are summarized in Table 1. All five students show achievement gains

Table 1 about here

varying from one to four levels.

Standardized test scores, pre and post, are given in Table 2.

Table 2 about here

While the students generally remained fairly stable in the Vocabulary subtest scores, all showed substantial gains on the Comprehension subtest.

The analysis of audiotapes of the instructional sessions revealed evidence of developing metacognitive strategies, and particularly, self-monitoring strategies. The earlier sessions were marked by a preoccupation with the "right" word and the "right" answer. As students began to reflect on the content more globally, and on their own resources as readers, they began to question more critically and to discuss alternative responses. It became apparent from early discussions that all students regarded text as totally autonomous. With difficulty, and with considerable discussion, they gradually moved toward scanning their own experiences in relation to textual information.

Early attempts at cloze completions were characterized by searches for a specific word that would fit as opposed to searches for any one of a number of logical alternatives. The shift to consideration of alternatives was made without difficulty. However, the shift toward consideration of both local and global context to arrive at alternatives was more gradual.

Initial attempts to summarize were laborious. For the most part these attempts were little more than stringing together verbatim phrases from the text. It was clear that students had no understanding of the notion of summarization or the strategies necessary to engage in making summaries. The same can be said for their ability to predict. Gradually, however, students, with varying degrees of success, came to "think through" segments of text to arrive at summaries and to predict.

The use of mapping to show interrelationships among segments of text proved successful almost immediately, perhaps because it was

introduced late in the conference sessions. One student, in fact, remarked, "That can help you make a summary," an indication that she was making connections between the mapping and earlier strategies.

A comparison of pre-session and post-session assessment tapes showed the following qualitative changes. There was clearly less preoccupation with word accuracy in post-session readings. There was considerable evidence of self-questioning and self-monitoring in post-session readings as well as in students' reactions as they listened to their own taped readings. A number of comments like, "My first guess didn't make sense; I went back to think what happened," revealed a sense of consideration of whole text. There was a marked change in response to inference questions, clear evidence that they could draw on prior knowledge and implicit text information to arrive at responses.

Posttest IRI discussions indicated that there had been some consciousness-raising in regard to reading for meaning. One boy said, "I learned to make sense out of what I read." Another said, "I can't do it all--saying the right words and still thinking about the story." They seemed freer to make semantically and syntactically acceptable substitutions, additions, deletions without concern for "getting the words right."

All in all, the program, though small in scope, showed considerable potential for raising students' awareness of themselves as readers, for developing self-monitoring, and for concomitant improvement in overall comprehension.

Ryan (1981) concluded that poor readers tend to read as if they neither expect nor care that text make sense, i.e., they do not

monitor comprehension effectively and fail to use appropriate corrective strategies. To a large degree, this applied to the readers in this study, the exception being that the maintenance of local sense (as revealed in self correction of isolated words) was of concern to these readers.

The students at the outset of the study tended to focus on reading as a decoding process rather than as a meaning-getting process. There appears to be a consensus in the literature that such is the general expectation of younger and poorer readers (Baker & Brown, 1984; Paris & Myers, 1981). The literature further suggests that the ability to reflect on one's own cognitive processes, to be aware of one's own activities while reading and problem-solving, is a late-developing skill (Baker & Brown, 1983). It is difficult to ascertain to what extent such inability is constrained by the quality of literacy experiences. From the limited data of this study it is tempting to suggest that the quality of experience, even on a short-term basis, can direct children to reflect on what they are doing, to at least begin to regulate their reading behavior, and to engage in strategies, generally, which focus on meaning.

The results of studies like this point out the pitfalls of single assessments which rely on "static snapshot descriptions of developmental status frozen in time and welded to a particular task environment" (Brown & Reeve, 1985). Problems arise particularly when such limiting, biased data are matched with equally constraining instructional contexts which at once limit student learning and at the same time confirm assessment data. Such assessments, indeed, deny the existence of "bandwidths of competence" and provide both child and

teacher with a depressed profile of abilities. Viewing assessment and instruction within Vygotsky's theory of "zone of proximal development" has important implications for the assessment and improvement of reading achievement.

In this study the relative superiority in vocabulary over comprehension scores was interpreted as indicative of the availability of knowledge which was not applied optimally in the process of comprehension. MacGinitie (1985) found that discrepancies in reading comprehension scores of low and high vocabulary students stemmed from diverse sources including metacognitive deficits. The findings of this study corroborate those of MacGinitie and, generally, support the view that cognitive functioning depends not only on adequate knowledge but also on a level of awareness and control of knowledge.

Considerable attention has been given recently to the aspect of social interaction in the facilitation of metacognitive abilities (Bereiter & Scardamelia, 1982; Brown & Reeve, 1985; Palincsar & Brown, 1984). It is not entirely clear exactly the roles performed by such interactions. It seems reasonable to suggest that modeling and imitation with feedback opportunities are important factors. It may also be that a generally supportive context in which children dare to explore the limits of their cognitive abilities is a factor. It would seem that in order to help children move from "other regulated" to "self regulated" learners who are able to "split their focus" between content and process, dramatic changes in instructional programs are called for.

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Table 1

Pre and Post IRI Functional Reading Levels

		Subject									
		1		2		3		4		5	
		pre	pos	pre	pos	pre	pos	pre	pos	pre	pos
Independent:	Oral	2	2	3	7	4	4	2	5	1	6
	Silent	1	2	2	6	3	-	1	2	1	-
Instructional:	Oral	3	5	7	11	6	6	4	6	5	5
	Silent	-	3	6	7	4	6	2	3	2	6

Table 2

Pre and Post Gates-MacGinitie

Subtest Scores in Stanines

	Vocabulary		Comprehension	
	pre	pos	pre	pos
Subject 1	4	5	2	6
Subject 2	9	9	6	7
Subject 3	7	7	5	7
Subject 4	6	6	4	5
Subject 5	6	5	4	5